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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Takuya Shimada

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EXAMINER

TRAN, DUNG D

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/531,062	SHIMADA, TAKUYA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dung D. Tran	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 41-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/28/2009</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/23/2009 has been entered.

### ***Response to Arguments***

2. Claims 41, 43, 45-48 and 50 have been amended back to their prior version, as reflected in the 10/7/2008 Preliminary Amendment. Applicant has amended the claims in order to have the prior version of the claims considered and examined against Horri and Lin references.

Claims 52-53 have been cancelled.

Claims 41-51 remain pending in this application.

3. Applicant's arguments been fully considered but they are not persuasive. Applicant argues that the applied references of Horri and Lin are not seen to disclose or suggest "(i) setting a tint adjustment value used to adjust the monochrome signal to a desired tint desired by a user, (ii) acquiring color reproduction characteristics dependent on an image output apparatus and a recording medium, (iii) converting the monochrome signal into a chromaticity signal of the color space using the set tint adjustment value and the acquired color reproduction characteristics, (iv) forming a color space color

Art Unit: 2625

signal from the converted chromaticity signal and a brightness signal according to the monochrome signal, and outputting the color space color signal, and that (v) in the converting, the monochrome signal is converted so as to map chromaticity points of black print color and white print color depending on the image output apparatus and the recording medium, and map a chromaticity point of the tint adjustment value for middle lightness excepting neighborhoods of black print color and white print color.” The Examiner respectfully disagrees with that since Horri teaches (i) setting a tint adjustment value used to adjust the monochrome signal to a desired tint desired by a user (column 3, lines 24-35 and step SP3 of figure 2, the supplied image data  $D_p$  can be a black/white image, column 9, lines 5-9), (ii) acquiring color reproduction characteristics dependent on an image output apparatus (printing characteristic for each color, column 3, lines 57-67) and a recording medium (printing medium, column 2, lines 32-39), (iii) converting the monochrome signal into a chromaticity signal of the color space using the set tint adjustment value and the acquired color reproduction characteristics (column 4, lines 1-22), (iv) forming a color space color signal from the converted chromaticity signal (step SP4 of figure 2 and column 6, lines 12-18) and a brightness signal according to the monochrome signal (figure 6 and column 9, lines 10-24), and outputting the color space color signal (column 6, lines 42-47).

Horri does not expressly disclose (v) in the converting, the monochrome signal is converted so as to map chromaticity points of black print color and white print color depending on the image output apparatus and the recording medium, and map a chromaticity point of the tint adjustment value for middle lightness excepting

Art Unit: 2625

neighborhoods of black print color and white print color. Lin, in the same area of image processing, discloses a process (figure 2) of color conversion, white point and black point mapping (figure 4A and abstract), and mid-tone adjustment to obtain the correct brightness of an image (column 6, lines 11-24). As noted above, the combination of Horri and Lin teach all of the features of the claimed invention.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 41-51** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 7,397,572 B1 to Horri in view of U.S. Patent No. 6,204,940 B1 to Lin et al.

6. As to **claim 41**, Horri discloses a color conversion method of converting a monochrome signal into a color space color signal on a color space independent of an apparatus, comprising the steps of:

setting a tint adjustment value used to adjust the monochrome signal to a desired tint desired by a user (column 3, lines 24-35 and step SP3 of figure 2, the supplied image data Dp can be a black/white image, column 9, lines 5-9);

acquiring color reproduction characteristics dependent on an image output apparatus (printing characteristic for each color, column 3, lines 57-67) and a recording medium (printing medium, column 2, lines 32-39);

converting the monochrome signal into a chromaticity signal of the color space using the tint adjustment value set in the setting step and the color reproduction characteristics acquired in the acquiring step (column 4, lines 1-22); and

forming a color space color signal from the chromaticity signal converted in the converting step (step SP4 of figure 2 and column 6, lines 12-18) and a brightness signal according to the monochrome signal (figure 6 and column 9, lines 10-24), and outputting the color space color signal (column 6, lines 42-47).

Horri does not expressly disclose wherein, in the converting step, the monochrome signal is converted so as to map chromaticity points of black print color and white print color depending on the image output apparatus and the recording medium, and map a chromaticity point of the tint adjustment value for middle lightness excepting neighborhoods of black print color and white print color.

Lin, in the same area of image processing, discloses a process (figure 2) of color conversion, white point and black point mapping (figure 4A and abstract), and mid-tone adjustment to obtain the correct brightness of an image (column 6, lines 11-24).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Yoshida/Kondo's color conversion method by the teaching of Lin because black and white point mapping would increase a dynamic range of an image, as well as remove any color cast from the image (column 1, lines 65-67 - column 2, lines 1-2).

Art Unit: 2625

7. As to **claim 42**, Horri further discloses wherein, in the acquiring step, the color reproduction characteristics is acquired from a profile (adjustment curve) of the image output apparatus (column 3, lines 57-67).

8. As to **claim 43**, Horri further discloses wherein, in the setting step, the chromaticity point for adjusting the monochrome signal is set as the tint adjustment value (column 4, lines 35-43).

9. As to **claim 44**, Horri further discloses wherein the chromaticity point is set in a predetermined range in the setting step (column 7, lines 9-14).

10. As to **claim 45**, Horri further discloses wherein, in the converting step, the monochrome signal is converted into a chromaticity point determined by a rate of change (user updating parameters until the desired tint is achieved, column 6, lines 1-47) in the neighborhoods of black print color and white print color (supplied image data Dp can be a black and white image, column 9, lines 3-9).

11. As to **claim 46**, Horri discloses a color conversion apparatus for converting a monochrome signal into a color space color signal on a color space independent of an apparatus, comprising:

a setting unit (operation input unit 2, figure 1) that sets a tint adjustment value used to adjust the monochrome signal to a desired tint desired by a user (column 3, lines 24-35 and step SP3 of figure 2, the supplied image data Dp can be a black/white image, column 9, lines 5-9);

an acquisition unit (image processing section 6, figure 1) that acquires color reproduction characteristics dependent on an image output apparatus (printing

Art Unit: 2625

characteristic for each color, column 3, lines 57-67) and a recording medium (printing medium, column 2, lines 32-39);

a conversion unit (image processing section 6, figure 1) that converts the monochrome signal into a chromaticity signal of the color space using the tint adjustment value set in the setting step and the color reproduction characteristics acquired in the acquisition unit (column 4, lines 1-22); and

a forming and outputting unit (printing section 7, figure 1) that forms a color space color signal from the chromaticity signal converted in the converting step (step SP4 of figure 2 and column 6, lines 12-18) and a brightness signal according to the monochrome signal (figure 6 and column 9, lines 10-24), and outputs the color space color signal (column 6, lines 42-47),

Horri does not expressly disclose wherein the converting unit converts the monochrome signal so as to map chromaticity points of black print color and white print color depending on the image output apparatus and the recording medium, and map a chromaticity point of the tint adjustment value for middle lightness excepting neighborhoods of black print color and white print color.

Lin, in the same area of image processing, discloses a process (figure 2) of color conversion, white point and black point mapping (figure 4A and abstract), and mid-tone adjustment to obtain the correct brightness of an image (column 6, lines 11-24).

The same motivation is used as the rejection to claim 41 above.

12. **Claims 47-50** are a color conversion apparatus for converting a monochrome signal into a color space color signal on a color space independent of an apparatus

Art Unit: 2625

(figure 1) correspond to method claims 42-45. Therefore they have been analyzed and rejected based on method claims 42-45 respectively.

13. As to **claim 51**, Horri further discloses a computer readable recording medium, storing, in executable form, a computer program for causing a computer to execute the color conversion method according to claim 41 (column 4, lines 16-22).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung D. Tran whose telephone number is (571)270-5309. The examiner can normally be reached on Monday-Friday 7:30AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on (571) 272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. D. T./  
Examiner, Art Unit 2625

/Mark K Zimmerman/  
Supervisory Patent Examiner, Art Unit 2625